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ABSTRACT

This exploratory study sought to compare the characteristics, attitudes and postsecondary knowledge of two groups of Indiana ninth grade students, those who plan to continue their education after high school and those who indicate that they are undecided about their post secondary plans. The study used data from a longitudinal study of college student choice which used a cluster sampling technique with an initial sample of 5,000 high school freshmen selected in 1986. Ten percent of the subjects were black. Most of the data used for this study were taken from ninth grade questionnaires and focused on variables of background, educational expectations, student characteristics, information impact, and college costs. The results indicated that a constellation of student and parental factors are associated with the certainty of students' postsecondary plans. The study confirmed the importance of parents in shaping the educational expectations of their children. Also, students who talk to their parents more than their peers and whose parents have higher educational expectations are more likely to plan to attend college. Involvement in high school activities also was found to be an indicator of students' postsecondary educational plans. Included are four tables, an appendix containing a list and descriptions of variables, and 52 references. (JB)

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Thinking About Postsecondary Education

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ASSOCIATION FOR THE STUDY OF HIGHER EDUCATION

This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Park Plaza Hotel & Towers in Boston, Massachusetts, October 31-November 3, 1991. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Conceptual Framework

Introduction:

For reasons ranging from economic and educational equity to concerns for economic competitiveness, state and federal policymakers have expressed interest in increasing the number of high school students who pursue postsecondary education and training. Alabama, Colorado, Illinois, Indiana, and New Jersey, represent some of the states who are exploring possibilities or are actively engaged in efforts to increase postsecondary participation rates. Currently, proposals are being considered for inclusion in the next reauthorization of the Higher Education Act which would fund early intervention programs to increase the number of students enrolled in postsecondary education.

Efforts to increase postsecondary participation rates will require programmatic interventions to reach target populations of high school students, and students even younger, who should continue their education beyond high school. After an extensive review of the literature on college choice, Hossler, Braxton, and Coopersmith (1989) report that most high school students have made their decisions about postsecondary education by their freshmen or sophomore year in high school. Thus, any intervention activities should be targeted at the early years of high school, or prior to the time students enter high school. Target student populations might include a variety of audiences

including minority students, rural students, and students who express an early interest in postsecondary education. In order to be cost effective, intervention strategies will be most productive if they can be focused on clearly identifiable groups of high school students who might be interested in postsecondary education, but who are at risk of not following through. Programs targeted at students who will enroll regardless of any interventions, or at students who are unlikely to enroll under any circumstance, result in wasted resources. The task for public policymakers is to identify populations of high school students who can most directly benefit from targeted interventions.

One likely target audience are students who are interested in postsecondary education, but are as of yet, undecided or uncommitted regarding their final plans. The exact number of high school students who are undecided during their high school years is unknown. Hossler and Stage (1987) report that 20% of a representative sample of Indiana high school freshmen were undecided about their postsecondary plans (p. 8). If this 20% is representative of students throughout Indiana, as many as 14,200 high school freshmen in the state were undecided about their postsecondary educational plans in 1987. Indiana has a relatively small population of high school students. In states such as California, Florida, New York, and Texas there could be even larger numbers of undecided students who might be persuaded to continue their formal education beyond high school if

appropriate intervention strategies were applied. These undecided students are a natural target audience for interventions.

Purpose

The purpose of this exploratory study is to compare the characteristics, attitudes and postsecondary knowledge of ninth grade students who plan to continue their education after high school with ninth grade students who indicate that they are undecided about their postsecondary plans. Undecided students are at greater risk of not continuing their formal education beyond high school. Using a sample of Indiana high school students, we will examine the factors associated with student plans to enroll in some form of postsecondary high school and the factors associated with being undecided about postsecondary education. For the remainder of this paper we will refer to students who plan to continue their education as "decided" and those who are uncertain about their post high school educational plans as "undecided". Using multivariate techniques, this exploratory investigation identifies factors associated with students' postsecondary plans. Questions which will be examined in this study include the following.

1. Are there differences in the family and student background characteristics associated with both decided and undecided students?

2. Do differences exist in the parental educational expectations and encouragement for postsecondary education among decided and undecided students?

3. Are there differences in the extent to which undecided and decided students talk to friends, teachers and counselors?

4. Do differences exist in the extent to which undecided and decided students have information about postsecondary educational institutions (PEIs) and student financial aid?

5. Are there differences in the extent to which decided and undecided students seek information about PEIs?

7. Are there differences in the amount of financial aid support needed by decided and undecided students?

In order to determine examine these questions, two discriminant analyses were performed, the first included all relevant variables. In the second, a factor analysis was executed using all relevant variables. Six factors emerged, these factors were then used in a discriminant analysis in order to identify factors association with decided or undecided postsecondary plans. In the next section, relevant research on student college choice is reviewed to provide a rationale for the selection of variables included in this study.

Review of Related Research:

To guide our research we drew on existing status attainment and college choice research. Theory driven research on student

college choice has its roots in both econometric (see for example Kohn, Manski and Mundel, 1976) and sociological research (see for example Sewell, Haller, and Portes, 1969). We drew upon sociological constructs from the status attainment tradition and econometric studies to frame this investigation. We made this decision because once students have developed predisposition to attend a PEI, it seems most likely that socializing agents such as parents, friends, teachers, etc. would be the primary sources of information as students begin to consider their educational plans. Status attainment theory provides a conceptual framework for identifying factors which might affect the stability of students' educational aspirations.

Econometric studies, suggest that students and their families will take into consideration both the potential costs and benefits of postsecondary alternatives, including both educational and non-educational options, in arriving at a decision regarding postsecondary education (Jackson, 1982). The primary econometric constructs included in this study relate to the ability of the student and the student's family to pay for postsecondary education. Faimly financial resources, financial need, and access to financial aid can have a direct impact on the computation of costs and benefits.

Status Attainment:

The work on status attainment theory of Sewell and his colleagues and the work of Blau and Duncan provide rich insights into the college choice process. Blau and Duncan (1967) posit

that family socioeconomic background and student academic ability are predicted to have a joint positive effect on aspirations for college. Further refinements of this basic model include: parental encouragement (Sewell and Shah, 1968) and the influence of significant others and high school academic performance (Sewell, Haller, and Portes, 1969; Sewell and Hauser, 1975). Significant others are the students' parents, teachers, and peers.

The influence of significant others and academic performance represent a linkage of social-psychological mechanisms with status attainment (Sewell, Haller and Portes, 1969). To elaborate, mental ability is assumed to affect academic performance in high school. High school performance and family socioeconomic status exert positive influences on the perceptions of significant others concerning the focal student. Aspirations for postsecondary education are, in turn, affected by the influence of significant others. Significant others such as parents, teachers and friends influence student aspirations either as models or through the behavioral expectations they communicate. Based upon status attainment research, key variables which might be expected to influence the stability of students' students' educational plans. Family characteristics include: parental education, socioeconomic status, parental support and encouragement, student ability, and students' interactions with peers, teachers and counselors.

Econometric Studies:

Econometric research has generally shown the there is a relatively inelastic demand for postsecondary education (Perlman, 1973). Regardless of the costs, students are willing to pay increasingly larger amounts for postsecondary education. There is some evidence of cross elasticity, that is students will opt for lower or higher priced PEIs depending upon the perceived differentials in cost (Kohn, Manksi and Mundel, 1976). This, however, is beyond the focus of this paper. There is widespread concern, however, that postsecondary education has grown beyond the financial means for many families, particularly low income families. Hossler and Stage (1987) found that concerns about being able to pay for postsecondary education was the most common reason cited by 9th grade students in Indiana who did not plan to continue their formal education after high school. For this study, variables measuring student and parental perceived need for financial support are included in the analyses.

Student College Choice:

While status attainment research can contribute to our understanding students' educational plans, this line of research has been criticized. Hossler, Braxton, and Coopersmith (1989) state that status attainment research has not addressed many of the more concrete and practical problems which students confront when making decisions about postsecondary education. To fill this gap we also review relevant research on student college choice in this section of the paper. Few studies have been

conducted which look at the questions being considered in this investigation. As a result, we focus on studies which have examined the effects of family and student upon students' aspirations to attend a PEI. This review provides the conceptual framework for the analyses which will follow.

Socioeconomic Status. A consistent positive relationship has been found between SES and postsecondary participation rates (Alexander, 1981; Corrazini, et al., 1972; Ekstrom, 1985; Elsworth, et al., 1982; Gilmour, et al., 1978; Hause, 1969; Jackson, 1978; Perlman, 1973; Sewell, et al. 1972; Tuttle, 1981; Yang, 1981). The strength of this association, however, is not clear. Most of the studies that have employed multivariate and causal modeling techniques have found SES exerted a weak influence, or no influence, upon on students' postsecondary aspirations (Jackson, 1986; Leslie, et al. 1977; Manski and Wise, 1983; Marini and Greenberger, 1978; Tuttle, 1981; Yang, 1981). Previous research suggests that SES does have an impact on students' aspirations; however, the impact may not be direct. The ability of SES to discriminate between decided and undecided students remains to be tested.

Student Ability. Empirical evidence indicates that student ability is positively correlated with plans to attend a PEI (Bishop, 1977; Carpenter and Fleishman, 1987; Hause, 1969; Hossler and Stage, in press; Jackson, 1978; Jackson, 1986; Manski and Wise, 1983; Mare, 1980; Peters, 1977; Rumberger, 1982; Tillery, 1973; Tuttle, 1981; Yang, 1981). Manski and Wise (1983)

found that high school GPA and SAT scores were the best predictors of who applied to college. Peters (1977) in a study of high ability students concluded that high ability high school students are eight times more likely to go to college than low ability students (p. 9). In total, these studies suggest that student ability and student achievement have a significant and direct impact upon student aspirations of high school students toward a postsecondary education.

Parental Educational Levels. Many studies report a positive relationship between the level of parental education the educational plans of students (Carpenter and Fleishman, 1987; Gilmour, et al., 1978; Hossler and Stage, 1987; Hossler and Stage, in press; Jackson, 1986; Manski and Wise, 1983; Solmon and Taubman, 1973; Trent and Medsker, 1967; Stage and Hossler, 1988; Tuttle, 1981; Yang, 1981). Jackson (1986), in his study of NLS and HSB participants, concluded that each year of parental education increased the likelihood of the student attending a PEI by 6% (p. 13). Hossler and Stage (in press) found that the combined level of parent's education had a positive indirect and direct effect upon students' educational plans. Parent's education explained 43.5% of the variance in the amount of parental encouragement that parents gave students to attend a PEI (an indirect effect), and in addition, parental education directly explained 9.5% of the variance in students' educational plans (p. 7). Overall, the evidence suggests that the level of parental education may exerts a strong influence upon students'

postsecondary educational aspirations, more than either SES or student ability.

Parental Encouragement. Investigations of student college choice have consistently found that the amount of parental encouragement and support for postsecondary education is related to the likelihood of attendance (Carpenter and Fleishman, 1987; Conklin and Dailey, 1981; Ekstrom, 1985; Gilmour, et al., 1978; Hossler and Stage, in press; Murphy, 1981; Parents, Programs and Pennsylvania Students, 1984; Russell, 1980; Stage and Hossler, 1988; Soper, 1971; Tillery, 1973). Hossler and Stage (in press), in their LISREL path model, found that parental encouragement for their students explained 18.2% of the variance in the postsecondary plans of Indiana ninth graders and exerted the largest direct effect on students' plans. Conklin and Dailey (1981) used multiple regression techniques to analyze data gathered from a longitudinal study of high school students from their sophomore to senior year. The sample included 2,700 students in southern New York State. They found that as the level of parental encouragement increased, students were more likely to attend four year PEIs and more selective PEIs. Sewell and Shah (1978), using data from NLS, reported that the amount of parental encouragement explained 37% of the variance in postsecondary aspirations (p. 12). Parental encouragement explained more of the variance than any other variable, including SES and student ability. Parental support and encouragement exert a strong influence upon the post high school plans of

students. In this study, student and parent self-reported measures of parental encouragement are included in the analyses.

Peer Support and Encouragement. In addition to parental encouragement, researchers have found a relationship between students' educational aspirations and the level of support and encouragement of peers (Carpenter and Fleishman, 1987; Coleman, 1966; Falsey and Heyns, 1984; Jackson, 1986; Russell, 1980; Tillery, 1973). In his comparison of the NLS and HSB samples, Jackson (1986) found that the presence of college-going peers produced one of the strongest correlations when he attempted to isolate the most important determinants of postsecondary enrollment. Hossler and Stage (1987), however, employed correlational statistics to examine the relationship among postsecondary plans of Indiana ninth graders and their peers. They found that those students who were not planning to attend a PEI more frequently consulted their peers. This may suggest that students who are not planning to attend college may be more likely to influenced by their peers than those students who are planning to go to college. The results from these studies suggest that peers also influence the postsecondary educational plans of high school students. In total, however, the evidence indicates that peer support and encouragement is not strongly associated with students' aspirations. Student self-reported measures of encouragement are included in the analyses.

Encouragement from High School Counselors and Teachers. In College: The Undergraduate Experience, Boyer (1986), asserts

that high school counselors and teachers need to work more with high school students so that the student college choice process will be better informed. Some empirical investigations have examined the influence of encouragement from high school counselors and teachers on the educational aspirations of students (Ekstrom, 1985; Falsey and Heyns, 1984; Lewis and Morrison, 1975; Tillery, 1973; Parents, Programs and Pennsylvania Students, 1984). These investigations indicate that counselors and teachers have little impact on student aspirations (Lewis and Morrison, 1975; Tillery, 1973; Parents, Programs and Pennsylvania Students, 1984). There is some evidence that counselors and teachers may have a stronger impact upon low income and minority students (Ekstrom, 1985; Hossler and Stage, 1987; Lewis and Morrison, 1975). Nevertheless, even among minority students, however, the actual percentage of students that relied on counselors was far below 50%. Overall it appears that counselors and teachers may have very little influence upon the stability of the educational plans of most high school students. Variables included in this study to measure the impact of peers and teachers are survey items measuring the frequency with which students talk to peers, teachers and counselors about their plans

Role of Information. There are few empirical studies of the role of information about PEIs upon students' educational aspirations. Hossler, Schmit, and Bouse (in press) found that student and parents who reported being more knowledgeable about postsecondary education could more accurately identify the costs

of attending the PEIs of their choice. Chapman (1981) suggests that the marketing activities of PEIs can influence students' decisions. Lewis and Morrison (1975) reported that high school seniors most frequently sought information about PEIs in the following ways: (1) writing away for a catalog, (2) campus visits and interviews, (3) talking to guidance counselors, (4) using catalogs available in high schools, and (5) talking to students already in college. The two most frequently employed activities required students to initiate activities as opposed to using sources of convenience or passively waiting for information to come to them. Caution must be exercised in interpreting these results, however, because this study was conducted before the widespread use of mail marketing techniques (which are possible through the sales of prospective student's names by The College Board, American College Testing, and other organizations). The use of mail marketing techniques may influence student aspirations. In this study, we are interested in the impact of information upon students' educational aspirations. We employ measures of information which include sources of information, the extent to which students actively request or seek out information, and the extent to which students read the information they receive.

Methods & Data

Data Collection:

The data set for this study is part of a longitudinal study

of student college choice funded by the Lilly Endowment and the Indiana College Placement and Assessment Center (ICPAC). Using a cluster sampling technique (Walker and Burnhill, 1988) an initial sample of 5,000 Indiana high school freshmen was selected in 1986. Ten percent of the students in the sample are Black. Both the students and their parents were surveyed five times between the spring of 1987 and the spring of 1990. The ninth grade suuveys were mailed to students and parents in January and February of 1987. The tenth grade survey was mailed in March of 1988. Two surveys were mailed to the class during the eleventh grade, one in December of 1988 and one in April of 1989. Response rates have ranged from a high of 64% to a low of 27%. The ninth grade survey questionnaires sought information about demographic factors, family background, high school experiences, student and parental expectations, and postsecondary plans. The tenth and eleventh grade surveys focused on the decision-making process of students and parents with regard to postsecondary plans. Two telephone surveys of non-respondents have also been conducted. In each instance the results indicate few differences between respondents and non-respondents.

The vast majority of data used for this study were taken from the ninth grade questionnaires. Data from the tenth and eleventh grade year were used only where they offered information retrospective to the ninth grade. The data were analyzed using those students who had responded to all of the surveys and for whom none of the variables of interest were missing (178).

Data for the sample were compared to the overall population to see if there were differences between the two groups. The groups were very similar; however, it is important to note that, for both groups, parent income was higher for those students with complete information for all survey items of interest than those students with incomplete information. Also, for the undecided sample, parent education and parent's expectations for the student's education were somewhat higher than for those students with incomplete data. These are noteworthy differences, because the findings of this study may be more representative of students who are the children of parents with higher overall levels of education, and in one of the two groups, higher levels of education.

The surveys cover a wide range of topics, however, only selected items from the surveys have been used for this study (see Appendix A for a description of all variables). Background characteristics included in this study are: race, gender, family income, and parental education. In addition, a measure of the educational expectations of student's parents was included. Student characteristics and attitudes which were considered included are: student ability (as measured by GPA), student educational aspirations, when students first started to think about their postsecondary plans, and how often they think about their postsecondary plans. Variables measuring the impact of information were also included: the amount of information students requested, the amount of information parents requested,

when students received information, whether students read information they receive, and who students talk to about their postsecondary plans (parents, friends, teachers, etc.). Finally, items associated with the cost of postsecondary education were also included in the analyses. These included student and parental reported financial need and parental ability to help pay for postsecondary education. Parental income is also included, it can be considered both a family background characteristic and a measure of a family's ability to pay for postsecondary education. A complete description of the variables is available in Appendix A.

Analysis:

The classification variable of interest for this study was the postsecondary plans of ninth grade students. Students in the sample were divided into two groups: those who reported that they planned to attend a postsecondary institution following high school graduation and those who were undecided about their plans following high school. This study investigated the relative weights that various student background variables, student and parental expectations, and high school experience variables had in discriminating between the two groups.

Inspection of the group means in Table 1 reveals that some of the variables appear to differentiate between those ninth grade students who plan to attend a postsecondary institution and those who are undecided about their plans following high school. Stepwise discriminant analysis was used to identify which

variables might contribute most to the differentiation. Discriminating variables were entered stepwise with a probability of F to enter < .05.

Because there were insufficient data to cross validate the analysis with a second sample, it was decided that a second discriminant analysis would be performed using student factor scores as discriminating variables. The data were submitted to a principal component factor analysis followed by varimax rotation. Factors that had eigenvalues greater than one were retained. These factors were then used in a discriminant analysis in order to identify factors associated with decided or undecided postsecondary plans.

Because the standardized coefficients yielded by a discriminant analysis take into account the simultaneous contribution of all other variables, there exists the possibility that the contribution of one variable may be partially cancelled by the contribution of another. For this reason, it is recommended that structure coefficients, which are simple bivariate correlations between the original variables and the discriminant function and thus not affected by relationships with other variables, be used as a guide to interpreting the meaning of the canonical discriminant function (Klecka, 1980). Structure matrices were analyzed for each of the two discriminant analyses.

Results and Discussion

Results:

The first discriminant analysis yielded one discriminant function with a chi-square(3)=37.87, $p < .001$, and a canonical correlation of .44, accounting for 20% of the variance between the two groups. Three variables entered the equation: grade point average, how often the student thinks about postsecondary plans, and the time period when the student first began thinking about postsecondary plans. The overall multivariate F-ratio for testing the significance of Wilks' lambda was $F(3,174)=14.06$, $p < .001$.

The structure coefficients are listed in Table 2. The structure coefficients confirm the importance of gpa, how often the student thinks about postsecondary opportunities, and when the student first began thinking about postsecondary opportunities. In addition, parent educational expectations, receiving information early, and expressing interest in receiving information showed modest correlations with the discriminant function. A classification analysis run on the 325 students with complete data for the three variables entering the discriminant analysis yielded correct classifications for 77% of the students planning to attend a postsecondary institution and 56% of the undecided students.

The rotated factor matrix for the sixteen original variables is shown in Table 3. The analysis yielded six factors which

accounted for approximately 63% of the common variance. Although there were moderate cross-loadings, the variables aligned on reasonably discrete factors related to student background and experiences. Only those items with a loading of .40 or greater were used in labelling the factors.

Factor I represents financial need and related parent income. Factor II includes depicts a dichotomy between talking with friends and talking with parents. Factor III reflects an achievement and expectation component, with high loadings on student gpa, parent educational expectations and parent education. Factor IV reflects student and parent need or interest in receiving information about postsecondary opportunities. Factor V seems to tap an early "early interest and information" component, with a high loading on receiving information, thinking often about postsecondary options, and thinking about postsecondary plans . Factor VI appears to reflect talking to school officials and related consideration of postsecondary options.

The second discriminant analysis, using factor scores as discriminating variables, resulted in one discriminant function with a chi-square(2)=27.03, $p < .001$, accounting for 14.3% of the variance between the two groups. Two factors entered the discriminant analysis: Factor V, identified as early interest and information regarding postsecondary options; and Factor III, identified as achievement and educational expectations. The overall multivariate F-ratio for testing the significance of

students with higher grades and higher educational expectations are less likely to be undecided about their plans. The results demonstrate that access to information about PEIs is associated with being more certain about educational plans. This would suggest a relatively straightforward intervention activity of providing information to ninth graders. However, two additional variables, thinking more about postsecondary plans and requesting information, were also significant. It may be that access to information is a function of thinking about PEIs and requesting information. If this is true then thinking and requesting information may simply be measures of student motivation and interest. This might suggest that information without motivation might have little impact on students' postsecondary plans.

The second discriminant analysis produced similar results. Student and parental educational expectations, in addition to student achievement comprised one of the two significant factors. Early information, thinking early about postsecondary plans, and the extent to which students think about their plans comprised the other significant factor. Both of these analyses are similar to earlier studies using this data base which compared students who planned to enroll with those who did not (Hossler and Stage, in press; Stage and Hossler, 1989). Apparently the profile of undecided students parallels those of students who do not plan to attend a PEI. Hossler and Stage (in press) conclude that parental educational expectations, in addition to student achievement, talking to parents about postsecondary plans, and

Wilks' lambda was $F(2,176)=14.61$, $p < .001$.

The structure matrix for the second discriminant analysis is shown in Table 4. The structure coefficients are consistent with the results of the discriminant analysis. A classification analysis run on the 178 students with complete information for all variables constituting the factors resulted in a success rate of 90% for the students planning to attend a postsecondary institution and 42% for the undecided students.

The results of these analyses suggest that ninth grade students with plans to attend a postsecondary institution may be differentiated from undecided students as early the ninth grade by the amount of time spent thinking about and planning for postsecondary options, and the amount of information received regarding postsecondary options, as well a by academic achievement and student and parent educational expectations.

Discussion:

The results indicate that a constellation of student and parental factors are associated with the certainty of students' postsecondary plans. This study confirms the importance of parents in shaping the educational expectations plans of their children. The first discriminant analysis shows that students who talk to their parents more than their peers and whose parents have higher educational expectations are more likely to plan to attend a PEI. Students with lower parental expectations and who talk to their peers more are more likely to be undecided about their postsecondary educational plans. Not surprisingly,

involvement in high school activities are the best predictors of students' postsecondary educational plans. Though the study described in this paper did not include causal modeling as did Hossler and Stage, the results are sufficiently similar to suggest that the profiles of undecided students and those who do not plan to enroll may not be very different.

Conclusions and Recommendations

These results raise interesting questions which merit further consideration. The role of parents is well established. However, the role of early information on postsecondary plans of students has not been systematically studied. The impact of information may be minimal if student motivation and interest are also necessary, however, this may not be the case. Information may stimulate increased interest and therefore be a potentially effective intervention strategy. In addition, the results suggest that parents are also interested in information about postsecondary education. Given the role that parents play in shaping the postsecondary plans of students, providing information to them could also have an impact upon students. The potential impact of information about PEIs upon student and parents merits serious investigation.

In addition, this study and earlier ones which have used this data set have to date only examined student aspirations. In the future, aspirations should be compared with actual postsecondary activities. Did students who planned to enroll in

a PEI actually enroll? Now that the students in this study have graduated from high school these analyses will be possible.

From the perspective of public policy makers who attempt to influence postsecondary participation rates these results suggest that identical intervention activities could be targeted at both undecided students and students who do not plan to enroll. This makes intervention activities simpler because these results imply that different intervention activities need not be developed. As a result more generalized and therefore less expensive intervention activities are possible. The results of this study indicate that strategies which focus on information about postsecondary educational opportunities might be effective.

We must acknowledge, however, that the possibility that motivation and interest could be necessary pre-existing conditions for information to have an impact. If this is true, then this study provides little in the way of new insights into ways to encourage more high school students to continue their education beyond high school. Only further study will shed light on this question.

Table 1. Group Means and Standard Deviations

	Group			
	Attending PSI		Undecided	
Variable	Mean	SD	Mean	SD
Student gpa	4.20	.65	3.64	.90
Parent education	5.00	1.09	4.89	1.07
Parent income	6.53	2.51	6.51	2.05
Parent educational expectations	4.20	.75	4.00	.82
Student reported financial need	2.71	.82	2.88	.70
Parent reported financial need	2.84	.72	2.92	.67
Amount of information student requested	2.74	1.71	2.67	1.54
Amount of information parent requested	2.90	1.62	3.27	1.27
When postsecondary info received	4.25	.76	4.13	.72
When student read information	3.61	.84	3.34	.99
Talk to parents	.63	.35	.57	.39
Talk to teachers/ counselors	.05	.10	.04	.11
Talk to friends	.19	.31	.22	.34
How often think about plans	3.75	.74	3.30	.71
First thinking about plans	4.63	1.35	3.92	1.44
Parent ability to make provisions	2.52	1.15	2.22	1.13

Table 2. Discriminant Analysis Structure Coefficients

Variable	Structure Coefficient
Student gpa*	0.73
How often think about plans*	0.62
First thinking about plans*	0.50
Parent educational expectations	0.25
When postsecondary info received	0.22
Amount of information student requested	0.22
Talk to teachers/ counselors	0.10
When student read information	0.07
Student reported financial need	0.05
Talk to friends	-0.05
Parent education	0.03
Parent income	0.03
Talk to parents	-0.03
Parent reported financial need	0.01
Parent ability to make provisions	-0.01
Amount of information parent requested	0.00

Table 3. Rotated Factor Matrix

Variable	Factor Loadings I	II	III	IV	V	VI
Student gpa	.01	-.11	.65	-.01	.33	.23
Parent education	.40	-.04	.56	-.16	-.39	.21
Parent income	-.67	.15	.33	-.03	-.18	-.09
Parent educational expectations	-.03	.05	.76	.06	.06	-.22
Student reported financial need	.82	.05	.08	.11	-.10	.07
Parent reported financial need	.84	-.03	.00	.04	-.13	.06
Student need for information	.08	-.09	.03	.80	.05	.08
Parent need for information	.03	.18	-.10	.82	-.12	-.14
When postsecondary info received	-.06	.06	-.05	-.11	.72	-.10
When read college information	-.05	-.19	.09	.30	.16	.15
Talk to parents	.00	-.90	.02	-.05	.00	-.32
Talk to teachers/ counselors	.07	.16	-.05	.02	-.02	.88
Talk to friends	-.05	.92	.01	-.06	.04	-.11
How often think about plans	.11	.05	.25	.23	.55	-.02
First thinking about postsecondary plans	-.07	-.14	.11	-.01	.52	.40
Ability of parents to make provisions	-.49	-.06	.02	.11	-.14	.32

Table 4. Discriminant Analysis Structure Coefficients

Variable	Structure Coefficient
Early information and planning	.74
Gpa and parent education and expectations	.60
Talk to school	-.08
Talk to friends	.05
Desire for information	.04
Financial need	.03

APPENDIX A

Variable	Description
Student plans	Ninth grade student's plans for after high school graduation. '0'=undecided and '1'=attend a postsecondary institution.
Gpa	Gpa in ninth grade 4 A+ to A- 3 B+ to B- 2 C+ to C- 1 D+ to D- 0 below D
Parent education	Average of mother's and father's 7 postgraduate degree 6 college degree 5 some college 4 high school diploma 3 some high school 2 8th grade 1 grade school
Parent income	Family income range. 10 Over 50,000 9 45,000-49,999 8 40,000-44,999 7 35,000-39,999 6 30,000-34,999 5 25,000-29,999 4 20,000-24,999 3 15,000-19,999 2 10,000-14,999 1 <10,000
How often think about plans	5 Constantly 4 A great deal 3 A moderate amount 2 Very little 1 Not all

Parent educational expectations	Highest level of education parent expects ninth grade student to complete. 5 Masters degree 4 Four-year college degree 3 Two-year college degree 2 Vocational or technical degree 1 High school diploma
Amount of information student requested	Total number of areas in which ninth grade student would like additional information in investigating postsecondary opportunities. Possible choices were information about career options, postsecondary opportunities, admission requirements, financial assistance, housing, and academic support services.
Amount of information parent requested	Total number of areas in which parent of ninth grade student would like additional information in investigating postsecondary opportunities. Possible choices were information about career options, postsecondary opportunities, admission requirements, financial assistance, housing, and academic support services.
Student reported financial need	Amount of financial assistance needed for student to attend a postsecondary institution. 4 yes, for all 3 yes, for some 2 not sure 1 none at all

Parent reported financial need	Amount of financial assistance needed for parent to send student to a postsecondary institution. 4 yes, for all 3 yes, for some 2 not sure 1 none at all
Parent ability to make provisions	Ability of parent to make provisions for ninth grade child's education. 5 saving for > 5 years 4 saving for 2-5 years 3 saving for 1-2 years 2 not begun saving money 1 cannot save money
When postsecondary info received	Point in time when student started receiving information about postsecondary institutions or the military. Reported in eleventh grade. 5 before 9th grade 4 in 9th grade 3 in 10th grade 2 this past summer 1 this past fall
When student read information	When student read information. Was it read immediately, put away for later, or not read. Reported in eleventh grade. 4 read immediately 3 save, read in 10th grade 2 save, read in 11th grade 1 never read
First thinking about plans	When student first thought about plans after high school. Reported in eleventh grade. 6 before 9th grade 5 in 9th grade 4 in 10th grade 3 this past summer 2 this past fall/winter 1 he/she has not started yet

Talk to parents	Mean of talking to parents variable across grades 9, 10 and 11. Computed from question about who student talked the most with about plans after high school. 1 Parents 2 Friends 3 Teachers 4 Guidance counselors
Talk to friends	Mean talking to friends variable across grades 9, 10 and 11. Computed from question about who student talked the most with about plans after high school. 1 Parents 2 Friends 3 Teachers 4 Guidance counselors
Talk to teachers/ counselors	Mean talking to teachers/counselors variable across grades 9, 10 and 11. Computed from question about who student talked the most with about plans after high school. 1 Parents 2 Friends 3 Teachers 4 Guidance counselors

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